Multilingualism in Trinity College Cambridge Manuscript O.1.77.

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ABSTRACT

England has a rich tradition of medieval medical manuscripts surviving both in the vernacular and Latin, which were for a long period of time paid fairly little attention. The last two decades have seen an increase in research into scientific and medical works in the vernacular. What is, however, seriously lacking is a comprehensive treatment of the other side of vernacularisation, the Latin and mixed-language materials that make up the vast majority of medical texts surviving from England in the Middle Ages. My PhD is intended to be the first genuinely bilingual digital edition of the manuscript Trinity College, Cambridge, O.1.77, a small late-medieval medical handbook. This article looks into multilingualism in the manuscript. It starts with a description of the manuscript, which summarises known background facts about the codex and presents a slight revision of the manuscripts date. James (1902) has dated the manuscript 1460, based on markings on the fly-leaves, which is probably not accurate. I offer a new date of 1454-1459. The main part of the article consists of looking into multilingualism in the manuscript, firstly, on which texts are in Middle English and which in Latin, and secondly, by analysing code-switching between Latin and Middle English with a discourse-functional pragmatic approach. After which, I relate the findings into the socio-historical context of fifteenth century, based on other studies. The article finishes with a discussion of the possibilities the digital edition offers for the study of multilingualism in the manuscript and related text.

KEYWORDS: discourse-functional approach to multilingualism; manuscript studies; multilingualism; medical writing; astrology; code-switching; Latin; Middle English

1. Introduction

Medieval England had a rich tradition of medical writing, both in Latin and English. Vernacular remedy books survive from the Old English period, which is rare in a European perspective, and the tradition continued into the later Middle Ages, with a slight break in the thirteenth century (see Pahta and Taavitsainen 2004: 9). The biggest wave of vernacularisation took place in the final century of the Middle English period, between 1375 and 1475, which saw the use of vernacular extended to new kinds of texts, previously the exclusive domain of Latin. By 1475, even learned university texts can be found as vernacular translations (Voigts 1996: 814).

Estimates on the number of surviving medical and scientific manuscripts vary, and certain factors complicate the issue, such as defining what counts as a

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[1] This paper describes the aspects of my PhD dissertation related to multilingualism. It is a slightly expanded version of the paper I gave in the Foreign Influences on Medieval English conference in Warsaw in 12-13 December 2009. I am grateful to Prof. Irma Taavitsainen and Dr. Matti Kilpiö for their comments, and Dr. Mark Shackleton for his very quick and efficient language check.

medical and scientific manuscript: medical manuscripts may contain material, like magical charms or astrology, which do not fit into modern conceptions of science and medical recipes can be found scribbled in all kinds of manuscripts, wherever there is an empty space. According to one definition any manuscript transmitting information, excluding literary and devotional writings, can be counted among the medieval *fachliteratur* (see Voigts 1989: 347).

What is clear from the surveys that have been carried out[2] is that:

– Latin manuscripts are more common than vernacular ones,
– manuscripts containing more than one language (Latin, and English, sometimes French) are more common than ones containing only a single language, and
– Latin manuscripts remain more numerous up to the end of the Middle English period, and even in the following decades, at least until 1500.[3]

Research into medical and scientific manuscripts was for a long time, paid very little attention, and it was very unusual for them to be published in a scholarly edition. In 1919, Waley Singer wrote: "for the period intervening from the fall of Greek science to the rise of the more modern work, roughly for the 1,000 years from 500 A.D. to 1500, printed material is extraordinarily scarce. The ideas of our mediaeval forefathers on science and medicine are at present largely hidden from us." (97). Fifty years later, Robbins described the field as a "Yukon territory crying out for exploration. So little is known, so much has to be discovered" (1970: 413), meaning that several very popular texts, "of considerable biographical, sociological and historical interest" (414) were not accessible to modern scholars at the time (see also Harley 1982: 171).

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2 One of the most comprehensive surveys was carried out by Dorothea Waley Singer in the early 20th century (see Waley Singer 1919), though her figure of 15,000 examined MSS may be slightly exaggerated (Robbins 1970: 393) and she frequently dates manuscripts too early (Voigts 1989: 387). Her figures for 14th and 15th centuries are: 14th century: 1948 surviving Latin, and 140 surviving English manuscripts; fifteenth century: 3729 Latin, and 872 English MSS; showing a sixfold increase in English language MSS and a doubling in Latin ones.

Voigts carried out a survey of 178 manuscripts between 1375-1500 with scientific and utilitarian contents: she discovered 52 manuscripts exclusively in Latin (36 science, 10 medicine, 6 containing both science and medicine), 40 exclusively in English (10 science, 24 medicine, 6 both science and medicine), 86 containing more than one language (15 science, 37 medicine, 34 both science and medicine. 75 of these contained Latin and English and 11 Latin, English, French).

Pahta and Taavitsainen (2004: 4) use the eVk database, which lists ca. 10,000 extant items in Middle English. They emphasize the fact that less than hundred editions have appeared out of all these items.

3 According to Pahta and Taavitsainen (2004: 8-9) Latin remained more common for scientific publications until the end of the seventeenth century.

Recent decades have seen an increase in the attention given to medieval medical and scientific works, and the situation has slowly changed. The limited corpus of Old English texts has been studied in fairly good detail (Getz 1998: 39), and considerably more has been done with Middle English. Printed editions like Manzaloui 1977 and Tavormina 2006 have made available specific families of texts, such as the *Secretum Secretorum* tradition, or individual manuscripts, the massive Trinity College Cambridge MS R 14.52. Both also have very thorough introductions. There are also new electronic corpora which make linguistic enquiry into the medical materials easier. *Middle English Medical Texts* (MEMT), published 2005, collects all pre-2005 medical texts into a single searchable electronic database, and *A Corpus of Middle English Scientific Prose*, currently being compiled as a collaboration between the University of Malaga and Hunter Library in Glasgow, collects in an electronic database all of the Middle English medical manuscripts in the Hunter collection.

To elaborate on Robbins' figure of speech, the field is no longer quite the unexplored Yukon territory. Major areas of it are now filled with flags staking the claims of various research projects and researchers. Much remains to be done, and it will be a long time before the data is exhausted – but at least, at this point, the Middle English versions of the most influential and popular medical works are available, and considerably more is known about medical writing in Middle English than when Robbins wrote his article.

What is, however, seriously lacking is a comprehensive treatment of the other side of vernacularisation, the Latin and mixed-language materials that make up the vast majority of medical texts surviving from England in the Middle Ages. This can be considered a serious omission, since the developments did not take place in isolation. Nearly all vernacular medical writing in the Middle Ages was translated from Latin, and was very dependent on classical models (see e.g., Getz 1998: 35, Taavitsainen 2004). The same holds true for the earliest surviving Old English texts, *Lacnunga* and *Læceboc*, which are ultimately derived from the encyclopedia of Pliny the elder with some folk remedies (Getz 1998: 47) and vernacular treatises continue to be in close relation to Latin during the most important period of medieval vernacularisation, 1375-1500.

2. Trinity College Cambridge MS O.1.77

My PhD project is intended as the first genuinely bilingual online resource of medical manuscripts in late Medieval England, and will hopefully pave the way for similar resources in the future. The edition will contain the complete manuscript, giving equal amount of detail to Latin and Middle English texts. It is designed for both historical linguists and historians, but special attention is paid to the needs of historical linguistics, and it is primarily intended for the study of multilingualism. This paper summarises the known background facts about the

manuscript, and presents a preliminary analysis of multilingualism. The final section of this paper will contain an account of what the electronic edition will contain, and what are the research questions I plan to pursue when it is finished.

The text which I am editing, Trinity College Manuscript O.1.77, is a medical handbook containing texts on medicine, alchemy and astrology. Like all the manuscripts with the O-designation in the Trinity College, it was part of a collection, accumulated by Dr Thomas Gale (1635/6-1702) and his eldest son Roger (1672-1744), which was donated to the library by the latter in 1738 (see James 1902: v).

One of the most striking features of the manuscript is its small size. At only 75 x 100 mm, it can be best described as pocket-sized. It contains 202 folios, quired in eights (Voigts 1990: 50-51). The pages are frame ruled. The manuscript is mainly written on paper, but there are vellum leaves in the beginning and the end. Watermarks can be seen on folios 1r, 90v, 181v, 187r and 188v, and they are one of the factors which connect the manuscript to the so-called Sloane group (see below and Voigts 1990).

The manuscript is, for the most part, written by a single hand, responsible for both the Latin and Middle English texts in the manuscript (henceforth hand A). James (1902: 76) describes hand A as "roughly written". Voigts labels it "pointed Anglicana" (1990: 51). Items on the flyleaves in the beginning and end are not by the main hand, even though they are in Anglicana. It is quite possible that the same hand was responsible for all of the additions as well as marginal comments (see Mooney 1995: 85), but lacking certain identification I will not refer to them as hand B.

Like many other scientific and utilitarian manuscripts, Trinity O.1.77 is rather austere in appearance compared to many liturgical or literary manuscripts. It is, however, among the more decorated of the Sloane group and sibling manuscripts, and does have some decorative initials, decorations, a number *litterae notabiliores*, in red and blue, as well as many red underlinings, and highlighting strokes at the beginning of paragraphs in red. Incipits and explicits are in a slightly more formal hand, which may also belong to hand A. The rubricator not only adds red highlights, but has read the text closely, and frequently corrects mistakes made by hand A, ruling them over in red and writing between the lines in a very similar hand. It is possible that the same scribe was responsible for both, although a master–apprentice type of relationship also seems possible.

The manuscript contains 10 to 18 texts on medicine, depending on the manner of counting the texts. The exact number of texts in the collection receives somewhat conflicting information in various sources. James (1902) lists ten items, including both Latin and Middle English, not including items on the flyleaves. He treats the astrological section as a single item. Mooney (1995) lists six Middle English items, including the flyleaves. The eTK and eVK databases yield altogether eighteen items: seven in Middle English (eVK) and eleven in Latin

(eTK). They include some of the items on the flyleaves, listing the astrological note which James uses as the basis of dating manuscript as a separate item, and also treating the passage on apothecaries' weights as an individual item.

2.1. The Sloane Group of Middle English Manuscripts

Voigts (1990) relates the contents of Trinity College Manuscript O.1.77 to what she calls the Sloane group of Middle English manuscripts, a group of scientific and utilitarian manuscripts now part of the collection donated to the British library by Sir Hans Sloane.

The Sloane group can be better understood as consisting of two groups of manuscripts: six codices in the British library with "striking physical similarity" (28), but no textual overlap; and six manuscripts which share a number of texts and illustrations, but are less unified in terms of their physical appearance.

The manuscripts in the first group are BL Sloane 1118, Sloane 1313, Sloane 2320, Sloane 2567, Sloane 2948 and the BL add. MS 19674. The latter group consists of five more manuscripts. Three "siblings", Trinity MS O.1.77 Boston Countway Library of Medicine MS 19 and BL Sloane MS 3566, share texts with one of the group manuscripts, Sloane 2320, but are smaller in size, Trinity MS O.1.77 being the smallest of the lot; and two luxuriously decorated post-medieval (1480s–1490s) codices, Tokyo Takamiya 33 and Gonville and Caius 336/725, which Voigts calls "a second generation that has grown prosperous" (27).[4]

Following Voigts' nomenclature, I will refer to the first group as the "core manuscripts" and to the latter as the "sibling manuscripts" (including also the "second generation of a family that has grown prosperous", since they contain the same texts as the siblings).

One manuscript, Sloane 2320, belongs to both groups, having the physical characteristics of the core manuscripts, and the set of texts of the sibling manuscripts. Indeed, it may have been the exemplar from which the sibling manuscripts derive their content, since it appears to be of an earlier date than any of the sibling manuscripts, and, unlike the others, has a different hand for the Latin and English texts. Voigts also describes "considerable wear" on the first and last leaves of each gathering, which may suggest that it saw service as an exemplar – or alternatively circulated in booklet form (Voigts 1990: 29). This, of course, does not mean that the manuscript in question has been the one to serve as the exemplar for the sibling manuscripts, such as Trinity O.1.77 and Boston MS 19.

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[4] In addition, Voigts mentions three manuscripts bearing "some family resemblance" to manuscripts in the group: London Wellcome Historical Library of Medicine MS 784 shares one plague tract with the sibling manuscripts, British Library, Add. MS 5467 has nine folios, with the physical characteristics of the core manuscripts, and Oxford, Bodleian MS Rawlinson C. 815 contains two leaves of laxative recipes and charms, with the layout of the core manuscripts (27).

Both the core and the sibling manuscripts are characterized by having texts in a variety of languages. There are no single language codices in the group (Voigts 1990: 30). Trinity College Cambridge MS O.1.77 is actually the manuscript which has most English of the core or the sibling MSS (see Taavitsainen 2004b). None of them have appeared in a modern edition, with the exception of the Middle English texts in the sibling manuscript Boston Countway Library of Medicine MS 19 (Harley 1982).

The Boston manuscript is also interesting because it has been identified as the "litill booke of pheesyk" commissioned by Sir John Paston II and copied by the freelance scribe William Ebesham. It can also be assigned a certain date because it is apparent from the letters that Ebesham undertook the work while Sir John Paston was overseas, which is known to be in the summer of 1468, for the marriage of Princess Margaret of York (see Doyle 1956-1957: 299).

The Sloane group and related manuscripts were most likely copied in London or Westminster. The identification is based on the connection of William Ebesham with Boston Countway MS 19, since he is known to have operated in the London area. The related MS 5467, in addition to containing some leaves with the Sloane core group type of layout, contains two texts translated by John Shirley, another well-known figure of fifteenth-century London (Voigts 1990: 27).

The assumption is supported by a LALME-analysis Taavitsainen (2004b) has carried out on the language of MS O.1.77. Her conclusion is that the language resembles the Rosemary type identified by Angus McIntosh (1983), with some very provincial spelling characteristics and some Central Midland forms which can be found in a number of medical, especially surgical manuscripts (McIntosh 1983: 243).

2.2. Dating the manuscript O.1.77

Rather unusually, all of the sources describing manuscript O.1.77 assign an exact date to it: 1460. The first one to suggest it is James (1902: 77), who makes the following observation: "On the last leaf are some astronomical notes in Latin and English. The first refers to 1460."

The passage he refers to reads as follows:

(1) Notandu(m) q(uo)d *Anno d(omi)ni mill(esi)mo*
cccc(mo).lx(mo) co(n)iu(n)ctio solis & lune h(oc)
modo f(a)c(t)a e(st) (fol. 200r)

[(…)In the year 1460 the conjunction of the sun and the moon took place in this way(…)[5]]

[5] I am very grateful to Dr. Matti Kilpiö for reading through my Modern English translations of

James makes the assumption based on this piece of internal evidence, and it has carried into subsequent research. For instance both Voigts (1990) and Taavitsainen (2004) cite it as fact [emphases mine]:

> Cambridge, Trinity College MS.O.1.77, *dated 1460*, and Harvard Medical School, Countway Library of Medicine MS. 19., both contain the core of texts and illustrations found in Sloane MSS(…)
>
> (Voigts 1990: 27)

> (…)but it does not yield much material for dialectal analysis. Some forms point to the Central Midlands rather than London. Cambridge, Trinity College MS O.1.77, *dated 1460*, is another manuscript in this group(…)
>
> (Taavitsainen 2004b: 235)

There are, however, two problems with this dating. Firstly, the astrological notes on the last leaf are not in hand A. Mooney, for instance, (who only lists Middle English items in the manuscript) treats the hands as separate (1995: 85). Secondly, Folio 127b contains a crossed-out marginal comment in Latin (to a Middle English astrological text), which mentions the year 1459 [emphasis mine].

(2) *Ista planeta mart(is) i(n)trauit i(n) ariete domo de sua kalendis septe(m)bris an(no) do(mino) millesimo cccc(mo) lix(m).* et luna xvj h(oc) e(st) p(ri)ma existe(n)te i(n) num(er)o viz xvj. (fol. 127v)

[This planet Mars entered in Aries from its home of on the first of September in the year 1459(…)]

These two observations suggest that the actual date for the copying of the manuscript may have been somewhat earlier than 1460, as suggested by James.

Concentrating on the date of production is a commonplace bias in manuscript studies. As Harris notes: "(…)research tends to be conducted in terms of a manuscript's genesis (1989: 172)". Although her point has to do with the market of second hand books in London, the observation is also valid here. Manuscript scholars sometimes make the mistake of interpreting too much based on the time when the manuscript was first made, whereas it is entirely possible, and to be expected, that the codex saw use later on.

A better interpretation would be to take the appearance of the dates 1459 and 1460 as evidence of provenance, suggesting that the manuscript was used by someone interested in astronomy in 1459-1460. They could also be taken to provide a *terminus ad quem*, concluding that the manuscript originates in the mid-

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Latin and Middle English and for his feedback on them.

fifteenth century, before 1459. Voigts assigns the date 1454 to Sloane 2320 (1990: 27), and if that is accurate and the manuscript has served as an exemplar to the sibling manuscripts, including Trinity O.1.77, then it may have been composed between 1454 and 1459.

3. Bilingualism in Trinity MS O.1.77

The manuscript contains about 24,000 words in Latin and 5,500 in Middle English, which means that about about 82 per cent of the whole are in Latin and no more than 18 per cent in Middle English.[6] Of the related manuscripts, it is the one which contains most Middle English.

The codex includes texts on medicine, and the related fields of astrology and alchemy, including subjects such as laxative and purgative remedies, a uroscopy with coloured illustrations of urine flasks, a regimen of health attributed to Aristotle, three versions of the plague treatises by John of Burgundy, astrological medicine, a treatise on the medical properties of wines, and the book of Quintessence.

Table 1 contains the list of contents based on James (1902, texts on flyleaves added in the beginning and end).

Table 1)

[Flyleaves: a note on apothecaries' weights	mixed language]
1. Inc. manipulum medicine de digestiuis et laxatiuis.	Latin, ff.1–21
2. It is to vnderstonde who so wil loke an vryne.	*ME, ff.21–30*
3. Exposiciones vrinarum in ordine	Latin, 30–1
4. Tractatus nobilis de regimine sanitatis.	Latin, 31–53
5. Inc. tract. Mag. Joh. de Burgundia de epidemia	Latin, 53–73
6. Joh. de burdegala extractus in lingua anglicana	*ME, 73–83*
7. exortacio bona contra morbum pestilencialem	Latin, 83–92
8. Inc. de condicionibus Vij^{tem} planetarum	*mixed, 92–137*
9. tract. Vinorum diuersorum & vinum extractionis…	Latin, 137–173
10. quinte essentie	Latin, 173–199
[flyleaves: some astrological notes	mixed language]

The texts that contain English are one uroscopical treatise (2), one plague treatise, attributed to John of Burgundy (6), and two sections on the conditions of seven planets (8).

Texts that are exclusively in Latin without an English equivalent include laxative and purgative remedies (1), a regimen of health attributed to Aristotle (4), two texts on the medical properties of wines (9), and the book of quintessence (11).

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[6] Word count taken from MS Word. When the text is available in XML tagged form, it will be possible to give a more accurate figure.

All of the English texts appear next to Latin texts on the same subject matter (uroscopy, pestilence, astrology). In one case (a plague treatise attributed to John of Burgundy) the English text (6) is a translation of the Latin one (5) (see Harley 1982: 171–172).

There does not appear to be a clear-cut division between learned, prestigious Latin texts and more popular English ones. The English texts do not gloss the Latin ones, or otherwise facilitate understanding them, and their contents appear to be on the same level as the Latin treatises. Voigts notes the same phenomenon with the Sloane group in general: "The English texts usually either precede or follow different Latin texts on the same subject, and the texts in each language are of equal sophistication" (1996: 816, see also Pahta 2004: 75).

On the other hand, with the English texts there are always Latin texts which cover the same subject matter, whereas there are several subjects that do not have a corresponding English equivalent (laxative and purgative remedies, the regimen of health, medical properties of wines, the book of quintessence).

Of the two urine tracts, the English tract (2) is longer than the Latin one (3) and appears to be the main one. It contains the theoretical part, and pictures of urine flasks in which the urine is depicted with coloured ink.

(3) Also it behoueth
to co(n)sider(e) þe s(u)b
stau(n)ce of þe vryne whe
þ(er) it be thykke or thy(n)ne.
& þe qualite wheþ(er) it
be hygh(e) or lowe of colo(ur)
& þe quantite wheþ(er) it [22r]
be litil or mych(e).& þe co(n)
tentys & þe cloudis þ(at)
ben þ(er)yn . And i(n) which(e)
r(e)giou(n) þey ben yn.& if
þey ben ou(er)al i(n) lyche col
lourid . or if it be more
remisse i(n) one r(e)gione(…) (fols. 21v-22r)

The Latin tract, in contrast, is a short mnemonic piece, which simply lists the colours of each urine comparing them with what they resemble.

(4) COlor rubeus e(st) quasi
fla(m)ma ignis/
(...)
Karapos;
albestens se(m)(per) spissa est
ut vellus cameli (fol. 31r)

[The colour Rubeus is like a flame(...) Karapos becoming white always thick like the skin of a camel.]

Of the astrological texts, Harley notes, the Middle English one, which describes an individual's character and disposition based on the ruling planet at the time of his birth, is more popular than the Latin material it accompanies, some of it in the form of astrological charts (Harley 1982: 172). Trinity O.1.77, uniquely among the sibling MSS, includes a second Middle English astrological tract, which relates the effects of the seven planets to the twelve signs of the zodiac (fols. 122v-136v). As an interesting side observation, all of the texts related to the seven planets are in English, and those related to the twelve signs in Latin. The same is true of the short Middle English mnemonic list on the Seven planets, not in hand A, located on the last flyleaf 200(v) as the very last item of the manuscript.

3.1. How are Latin and Middle English used in texts, as well as marginal comments, metatext and flyleaves?

This section looks at how Latin and English are used in the manuscript, paying special attention to the passages that contain both languages. The aim is to find out what functions the two languages have, and whether one of them has uses which the other does not. The focus is mainly on what Schendl calls the *discourse functional-pragmatic* approach to code-switching, rather than the *grammatical-syntactic* approach (2002: 61), although I will comment on the syntax where relevant.

As is apparent from the previous sections, the manuscript is an anthology of texts in English and Latin, predominantly the latter. Only a handful of mixed language passages can be found in the manuscript. The best examples of code-switching and macaronic material come from the beginning of the manuscript, a short treatise on the different types of apothecaries' weights (scruple, drachm, pound etc.) used in the manuscript, in English, followed by a Latin recipe against jaundice. The text is a very common type which can be found in numerous manuscripts [emphasis mine].[7]

[7] The electronic Voigts and Kurtz database recognises the incipit in seven other manuscripts: Wellcome Library, London Med. Soc. 131; Huntington, HM 19079; Bodleian, Ashmole 1389; Bodleian, Douce 304; Bodleian, Rawlinson D. 678; Glasgow University Library, Hunter 95 (T.4.12); BL, Add. 30338).
eVK gives the following manuscripts for the latter incipit: Huntington, HM 19079; Bodleian, Ashmole 1389; Bodleian, Douce 304; BL, Add. 30338; Emmanuel College Cambridge 70; BL, Sloane 3171.

(5) þo wiȝtes is strau(n)ge & harde to
knowe y wole titil he(m) here /
A povnde is þ(us) writen . lj .j.
halfe a povnde þ(us) . lj.ss . Oþ(er) þ(us)
lj.dj . A q(ua)rtro þ(us) q(ua)rt(er) .j. An
vnce þus .ʒ̄ .j. halfe an vnce
þus ʒ̄ .ss or þus ʒ̄. dj /A drame þ(us)
ȝ j./ halfe a drame ȝ.ss . or þ(us)
ȝ.dj ./ A scripule þ(us) Ə . j. half a
scripule þ(us) .Ə ss . or þus Ə dj ./
A scripule weieþ a peny . & iij(e)
sc(ri)pules ben a drame & viij dra mes
a vnce & xvj vnces make(n)
a povnde / and an handful is writen
þ(us) m. & halfe an handful þ(us).
m. ss. or þus .m. dj. & c(a)
Optima medicina (pro) ict(er)icia .i.
iaundise / R(ecipe) tarmarite .ȝ.l.ss(…)(fol. 1r)

[The best medicine against ictericie, that is, jaundice. Take one and a half drachms of turmeric(...)]

Voigts includes a slightly different version, from BL Sloane 3171 (not related to the Sloane group), as an appendix. It is the only Middle English item in an otherwise all-Latin codex. It begins "For to rede and undyrstonde þe wrytyng þt comyþth [sic] hereaftyr and suche odyr wryȝtynges as leches wryten in makyng of here medycynes wheþer hyth be in englysse or in latyn(...)" and ends "(...)and þus þey be wreten in latyn bokys" (1989b: 109).

The version in Trinity MS O.1.77 differs from the one quoted by Voigts in keeping a low key about the language. Unlike Sloane 3171, it does not explicitly call attention to the language with which the apothecaries' measurements are used. This is despite the fact that it is found in a polyglot manuscript, in which language use is more complex than in the monolingual Latin Sloane 3171. On the other hand, this is in line with the multingualism of the manuscript, since this type of material is essentially language-independent. Symbols, or sigils, used for measurements can be read out aloud in English just as well as in Latin (see Voigts 1989b: 98).

The following passage, in the flyleaf following shortly after the previous example, contains one of the few "intrasentential" (see Schendl 2002: 55) switches in the manuscript [emphases mine].

(6) *Ad rectificand(is) epar & ad illud*
co(n)seruand(is) ab adustac(i)o(n)e & i(n)flacione
R(ecipe) .li .j. de sug(er)loof .iiij.
cocliaria plen(e) de saudres *& iiij*
cocliare plen(e) de shawy(n)g of yue
ry. & bete þe yu(er)y to smale poud(er)
[2v]in a mort(er) & putte so(m)me of þe
sug(er) w(ith)al. & aft(er) for ell(es) it wolle
not be bete(n). & aft(er) þ(at) . put al i(n)
a vessel & menge it toge(ede)r(is) &
bete it to poud(er) til it be sotel.
& **take ha(lfe) di sponeful. or a sponeful**
at ones þ(er)of by day tyme
or nyȝt tyme as þe semeþ need(…). (flyleaves 2r-2v)

[For restoring the liver and for preserving it from burning and swelling. Take one pound of a loaf of sugar, four spoonfuls of sandalwood and four spoonfuls of shaving of ivory.(…)]

It is a recipe in which the language changes from Latin to Middle English in the middle of a sentence. The syntactic structure repeats the Latin phrase "cocliaria plene de" [spoonful of] twice, both times completing it with a Middle English phrase.[8] Syntactically the sentence is unified. The Latin verb "recipe" is represented with the common brevigraph, and the sentence continues a simple imperative, which is very typical for recipes, not the most syntactically complex of genres. The recipe continues in Middle English. The phrase "halfe a sponeful" occurs later in the same recipe, showing that the same information can also be communicated in Middle English. This type of usage is reminiscent of Voigts' category of "Mixed-language Texts Where the Alternation of Languages Appears to be Inadvertent" (1989b: 105) or Pahta's code-switched utterances in which the writer simply goes back and forth between English and Latin (2004: 94). The code-switching may be related to the specialist vocabulary, being either in English or in Latin (81), or simply to copying from a variety of exemplars.

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[8] I am grateful to Prof. Herbert Schendl for his feedback on the passage at the conference and pointing out to me the parallel syntactic structure of the phrases which contain the switch. He also suggested that the word 'saudre' might be considered as a switch into French. According to the MED, it has the following meanings (relevant here): "(a) Sandalwood, the wood of any of several trees of the species Santalum, esp. the white sandalwood (Santalum album) and the red sandalwood (Pterocarpus santalinus)(…) (b) powdered sandalwood(…)". The word is attested numerous times in recipes and medical texts in the 14th and 15th centuries, the earliest quotation dating from 1325. It seems to be well enough established to be treated as borrowing rather than a code-switch in the latter half of the 15th century.

The remainder of the introduction contains more recipes, a couple of which are in Middle English and the majority in Latin. All are scribbled together one after the other, without explicitly marked headings. The effect can perhaps best be described by the word macaronic. Intrasentential switches are often taken to imply good linguistic competence on the part of the text producer (see Schendl 2002: 56), and the effortless switching between the two languages in the introductory passage in the flyleaves suggests this. It is also noteworthy that many of the marginal comments are in Latin. For instance, the note on the position of Mars (see example two), containing the year 1459, occurs with the English astrological tract on the effects of the seven planets (see examples 10-12). By far the most common type of marginal comment are Latin recipes, also suggesting that whoever wrote them had a good command of the specialist vocabulary of medicine.

3.1.1. Text organising passages

(7) Cui sit laus & gl(or)ia (per) to
ti(us) mundi climata (et) (per)
infinita seculo(rum) secula
Amen/
Explicit nobil(is) t(ra)ctat(us)
mag(ist)ri Ioh(an)is de burgu(n)-
dia co(n)t(ra) morbu(m) epidemi
ale(m)(...)(fol. 72v)

[To whom be praise and glory through the regions of all the world and through the limitless ages of ages. Amen. Here ends the noble treatise of Master John of Burgundy against the epidemic sickness.]

Another instance in which Latin is used almost exclusively are the metatextual passages: incipits and explicits. These categories are similar to the examples given by Pahta (2004: 90-97). There are several reasons for the use of Latin in a context like this. They are traditional and formulaic, having been established over the course of several centuries, since Antiquity. Many of them also contain opening or closing prayers, which are likewise formulaic and related to the register of religion, another area in which Latin traditionally had a strong footing and well-established conventions (see 87-90). In terms of code-switching theory, the switches are thus multifunctional (see 77-78).

There is one instance of an incipit in English. Folio 27(v) contains an English passage which serves to mediate between two sections of the uroscopy treatise, which are both in English. It is underlined and rubricated like the equivalent Latin passages. The more technical part of the heading is in Latin, while the Middle

English one offers a freer description of the contents.

(8) ¶Now folweþ þe sercles of
.J(us). Circulus 1(us) ¶þese vrynes.
(fol. 27v)

The English version of the plague treatise by John of Burgundy contains a double transitional passage. The metatextual apparatus is in Latin, but the text itself begins "here begynneth(...)". It is a case of what is sometimes called flagged codeswitching (Voigts 1996: 818). This is the only instance in the manuscript in which the language of the treatise is introduced explicitly.

(9) Iam i(n)cipit tractat(us)
Ioh(an)is de burdega
lia extract(us) i(n) lingua
anglicana co(n)t(ra) morbu(m)
[73r] pestilenciale(m) siue epide/
HEre be ¶miale(m)//
gynneth a noble
tretys made of
a good fisician John of bor
deus. (fols. 72v-73r)

[Now begins the treatise of John of Burgundy excerpted in the English language against the pestilential or epidemic sickness.]

3.1.2. Endings for numerals and astrological words

Another instance in which the manuscript displays some free-ranging variation between Latin and Middle English are the inflections to numerals found in some of the texts. One of the instances can be seen in example eight above, which contains Latin "circulus" headings which are abbreviated with an "-us" brevigraph which resembles the numeral 9. It can be seen as formulaic text organising material connected to the metatextual elements in the manuscript, or otherwise, just as an example of conventionally inflecting ordinals. Numerals are an area of language use which are not necessarily language-specific (see e.g., Voigts 1989b: 95).

The superscript inflections indicating suffixes in some place seem to be in free variation in Trinity O.1.77 in folios 125(v) and 126(r), which are in the longer Middle English astrological treatise on the seven planets (see above). The text uses English inflection "in aquary" and the Latin "in aquario & capricorno" within only a couple of lines of each other.

(10) dwellid i(n) eu(er)y sig
ne xxx monethis.& whe(n)
he regnyþ i(n) h(is) (pro)pir hous
þ(at) is to sey **i(n) aquario & ca**
p(ri)corno; þe(n) begy(n)ne grete
[126r] harmes & myscheues w(ith)yn
þe clymates of Þe erþe &
þ(at) moste whe(n) he is **i(n) aq(ua)ry.** (fols. 125v-126r)

The same text contains numerals, which are abbreviated and have Latin inflections as superscript characters. For example, the following passage contains a numeral followed by the superscript "o" to mark the Latin inflection, as in Latin "secundo".

(11) & xij houres & his course is **ij(o)**
ȝere/.The children(n) of mars
be of broune colo(ur) & þey be(n)
gr(e)te debate(ur)s & (con)tagious
peple (fol. 128v)

There are also opposite examples. In the following passage, the numeral 30 is abbreviated "xxx^{ti}," the superscript representing an English inflection.

(12) science & craft(is) This pla
nete goiþ h(is) course i(n) þe he
ue(n) i(n) oon ȝere & he dwelliþ
i(n) eu(er)y sygne xxx daies x.
horis & **xxx(ti)** mynut(is). And a
monge all þe planet(is) Þe
so(n)ne disposiþ al man(er) best(is) (fol. 129r)

4. Conclusions

Reviewing the data examined in the previous sections, I will now attempt to answer the following questions:

> How much can be assumed from manuscript features, related codices, and the use of Latin and Middle in the manuscript about the audience and the circumstances surrounding the production of Trinity College Cambridge MS O.1.77?
> How can one relate this the socio-historical and linguistic context of the fifteenth century (based on other studies)?

First to briefly review the facts: the manuscript is written in a single hand by someone who appears to be a professional scribe. The manuscript has some decorated initials, normally the job of a specialist, and was charged separately. It shares a number of texts with one Sloane group core manuscript, 2320, and all of the sibling manuscripts. One of the sibling codices, Boston Countway MS 19, is of a slightly later date, 1468, and contains almost exactly the same texts copied in a single hand by a professional scribe known to have operated in the London area. Neither the scribe nor the commissioner, Sir John Paston, were medical practitioners.

Consequently, there is no reason to assume that the scribe or the commissioner and owners of Trinity MS O.1.77 have been professionally connected to medicine. The physical characteristics of O.1.77 along with what is known about the origin and provenance of Boston MS 19, and the fact that the same collection of texts can be found in all of the sibling manuscripts, would support a hypothesis that it was commissioned as a single item, a pocket-sized medical handbook, from a professional scribe, related to the professional book trade of 15th century, by an outside patron, who may or may not have had a professional connection to medicine, and it was used by someone who made notes on astronomical phenomena.

In contrast, the core manuscripts in the Sloane group contain several hands, usually linked to different languages (Voigts 1990: 30-31), and some may have originated as booklets (29), both of which would seem to speak of a longer and more complicated compilation process. Manuscript 2320 also shows signs of wear at the beginning of each gathering which may be signs of the manuscript having been used as an exemplar (29)

The audience for the vernacular treatises has received much attention. It is clear that medieval universities functioned in Latin, and education in them guaranteed full literacy in Latin (Pahta and Taavitsainen 2004: 15). It is also accepted that a driving force for translating material into the vernacular was making it accessible to a less Latinate audience (10-12). But what the exact nature of the readership below the university level was has caused a good deal of interest and speculation: how much literacy did the barber-surgeons, apothecaries, midwives, layman practitioners, empirics, wise women have and what kind of texts did they use (Pahta and Taavitsainen 2004: 16-17, Robbins 1970: 394)?

Trinity O.1.77 is predominantly a Latin manuscript, and whoever made the marginal comments in it had a good functional literacy in Latin, attested by marginal notes in Latin and the type of intrasentential code-switching between the two languages found in the flyleaves at the beginning of the manuscript. This, along with the known facts, agrees pretty well with the group Pahta and Taavitsainen consider to have the next highest level of literacy: learned aristocracy (2004: 17). Still, of course, the evidence is far from conclusive.

The manuscript comes from the latter half of the fifteenth century, a point at which vernacularisation "can be described as largely complete by 1475". Of the types described by Voigts (1989a), it falls under the majority, i.e., manuscripts which contain both Middle English and Latin. It is quite late in the period, and at that time, as the sizeable Trinity MS R 14.52 testifies, English could be used for even the most learned type of uses (Tavormina 2006: xii). The existence of manuscripts like Trinity O.1.77, on the other hand, speaks of the strength of the Latin tradition.

5. The digital edition

The digital edition which I am preparing will be designed in a way that it will function as reliable data for historical linguistics. This involves encoding sufficient amount of detail on linguistic variants without normalising, modernising, or emending the data, and keeping editorial interference transparent (see e.g., Kytö Grund and Walker 2007 or Lass 2004)

I am using TEI P5 –conformant XML tagging built on stand-off architecture. Features included in the base-level annotation are a graphemic transcription of the text (see e.g., Fenton and Duggan 2006), select manuscript features such as layout, and information about the manuscript and hand. Each word will also be tagged with a normalised form to facilitate linguistic research, and an ID which allows additional tagging by means of, for instance, POS tagging, semantic annotation or lemmatisation.

The development of the edition will take place in collaboration between the *Digital Editions for Corpus Linguistics* (DECL) project, which aims to create a framework for producing online editions of historical manuscripts designed to meet the needs of corpus linguistics, using a more strictly defined subset of the TEI guidelines.[9]

My PhD project has both short- and long-term goals related to the study of multilingualism. Short-term aims include a more comprehensive and detailed look into the code-switching phenomena that have been described here. The XML tagging will enable corpus searches on features like marginal comments and metatextual passages (see 3.1. above). It will be easy to generate background information about the distribution across the various functions from the base-level tagging. The edition will make it possible to get information on features like spelling variation or syntactical complexity in English and Latin, in order to see whether the accepted general view that Latin was more regular is supported by quantitative data in the Latin and Middle English texts in this manuscript. In addition, the tagging will also make it possible to get quantitative information, for

[9] The aims of the project are presented in more detail in Honkapohja, Kaislaniemi and Marttila (2009).

instance on which brevigraphs and contracted forms carry into the vernacular, and how frequently they are used.

Long-term goals, after finishing my PhD, include expanding the edition with other related multilingual medical and alchemical manuscripts in the Sloane group, which will increase the usefulness of the database, by allowing, for instance, comparative study of the same text in different manuscripts in the same group. One possibility would be to perform a LALME study on the English sections of all of the sibling group manuscripts, relating them to each other and dialectal locations, in order to see how this fits into the picture of a genesis in the London area. This could also be used as a starting point for a comparable study on Latin manuscripts in the group, in order to see how the variation in the two languages corresponds with one another. Another possibility is to make a computer-assisted stemmatological study to clarify the relations of the sibling group manuscripts to one another.

Other long-term goals are related to comparative studies between Middle English and Latin in scientific and medical writing over a longer period of time. One of the challenges will be finding data that is comparable. For classical Latin and Greek, there are plenty of resources, and corpora like MEMT and *A Corpus of Middle English Scientific Prose* make a fairly good range of data for Middle English medical writing available. Data is currently very scarce on medieval scientific prose in Latin.[10]

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[10] Some examples are to be found in the Corpus of Latin from Anglo-Saxon sources, which will be made available at the University of Helsinki (Olga Timofeeva; Matti Kilpiö). Syntactic comparisons will be facilitated by the Perseus Treebank. Philipp Roelli (University of Zürich) is also in the process of compiling a corpus of Medieval Latin scientific texts.

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CORPORA, ONLINE-RESOURCES & CATALOGUES

A corpus of Middle English scientific prose
Compiled at the University of Malaga.
<http://hunter.filosofia.uma.es/manuscripts>

eTK
A digital resource based on Lynn Thorndike and Pearl Kibre, *A Catalogue of Incipits of Mediaeval Scientific Writings in Latin* (Cambridge, MA: Mediaeval Academy. 1963) and supplements. <http://cctr1.umkc.edu/cgi-bin/search>

eVK2
An expanded and revised version of Linda Ehrsam Voigts and Patricia Deery Kurtz, *Scientific and Medical Writings in Old and Middle English: An Electronic Reference* CD (Ann Arbor: University of Michigan Press, 2000). < http://cctr1.umkc.edu/cgi-bin/search>

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